REMARKS

The Office Action dated September 13, 2004 and the Advisory Action dated November 23, 2004 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1 and 24 have been amended. No new matter has been added, and no new issues are raised which require further consideration and/or search. Claims 12-23 and 31-43 have been allowed. Claims 1-11 and 24-30 are submitted for consideration.

Claim 30 was indicated as being allowable but is objected to for being dependent on a rejected claim. Applicants thank the Examiner for indicating the allowability of claim 30. However, for the reasons outline below, Applicants respectfully submit that claim 30 should be allowed.

Claims 1-9, 24 and 27 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,041,065 to Melvin in view of U.S. Patent No. 4,638,322 to Gerety. The rejection is traversed as being based on references that neither teach nor suggest the novel combination of features clearly recited in independent claims 1and 24.

Claim 1, upon which claim 2-11 depend, recites a system connecting multiple repeaters into a single collision domain. The system includes a first repeater having a plurality of network ports and stack connectors and a second repeater having a plurality of network ports and stack connectors. The system also includes a stacking bus connecting the first repeater via the stack connectors of the first repeater to the second repeater via said stack connectors of the second repeater and configured to relay carrier signals, collision signals and data between the first and the second repeaters. Upon detecting a collision across one of its network port, the first repeater

is configured to generate a collision signal for immediate transmission to the second repeater via the stacking bus. The first repeater is also configured to internally send the collision signal to itself, thereby ensuring that other ports on the first repeater receive the collision signal at the same time as the second repeater.

Claims 24, upon which claims 25-30 depend, recites a method for expanding a collision domain. The method includes the steps of determining if a collision exists at a repeater within a plurality of repeaters coupled to a stacking bus. If a collision exists, at the repeater, sending a collision signal to every repeater within the plurality of repeaters via the stacking bus, each repeater of the plurality of repeaters being configured to generate and send a jamming pattern to physical ports thereof upon receiving the collision signal. The method also includes the steps of internally sending, by the repeater determined to have the collision, a collision signal to itself and ensuring that other ports on the repeater determined to have the collision receive the collision signal at the same time as other repeaters.

As will be discussed below, the cited prior art references of Melvin and Gerety fail to disclose or suggest the elements of any of the presently pending claims.

Melvin teaches that repeaters provide basic functions, such as signal amplification, signal symmetry, signal timing, jitter reduction, preamble regeneration, collision handling, collision jam generation and electrical isolation. Col. 1, lines 36-39. Repeaters are commonly cascaded in a tree arrangement such that there is one upper repeater with a number of secondary repeaters. The repeaters generally have a fixed number of ports. Col. 1, lines 40-42. The limited number of ports combined with the maximum round trip delay requirement limits the number of end nodes that can exist in a given collision domain. The number can be increased by interconnecting repeaters via an inter-repeater bus. Col. 1, lines 46-50. Figure 1 shows a

repeater that includes repeater circuits and ports that are connected to inter-repeater buses. Data can be transferred across the inter-repeater bus. Col. 4, line 60-Col. 5, line 35.

Gerety teaches a communications network which includes a communication bus having a plurality of nodes interconnected to it. Col. 2, lines 60-64. Each node interconnects with a collision detection apparatus on the communication bus side of the node and each node includes a traffic control means for receiving data from the peripherals attached to the node and for regulating the transmission of that data onto the communication bus. The traffic control means also receives information from the communication bus and, in conjunction with a local microprocessor, distributes it to the designated peripheral. Col. 3, lines 3-12. Each node also includes a VLSI circuit chip which includes a transmit enable port, a data transmission port, a data receive port, a carrier sense port, a collision detection port and a transmit/receive clock port. Col. 3, lines 13-23. By closely spacing the nodes in the network, it is possible to provide a collision detection mechanism via a collision detection reference bus. Col. 3, line 65-Col. 4, line 10.

The communication bus in the network is made up of a data bus, a clock bus and a collision detection reference bus. The primary advantage of providing a distinct collision detection reference bus is that the impedance is precisely controlled and known. The carrier sense port and the collision detection port are connected across the collision detection reference bus. Col. 4, lines 14-43. The transmit enable port, the carrier sense port and the collision detection port are interconnected with the collision detection reference bus by means of a collision detection device. The collision detection device includes a current source segment and a collision detection segment. The current injection from the current source segment onto the collision detection reference bus is initiated by a change in the binary state at the transmit enable

port. Col. 4, lines 59-67. The same current is simultaneously applied to one side of a differential amplifier which is connected to the collision detection reference bus. Such a sensing recognizes possible malfunctions of the system and simultaneously ascertains the level of activity on the collision detection reference bus. In the event that a collision is detected, the transmission request signal remains on the collision detection reference bus for a pre-selected time to ensure that all transmitting nodes detect the collision. Such a sustained time is preferred to avoid collision from transmitting nodes which may not have obtained the collision status on the bus prior to the node request. Col. 5, line 4-Col. 6, line 9.

Applicants submit that the combination of Melvin and Gerety simply does not teach or suggest the combination of elements clearly recited in claim 1. Claims 1 and 24, in part, recite sending, upon detecting a collision by a repeater, a collision signal to every repeater within said plurality of repeaters via the stacking bus and internally sending, by the repeater determined to have the collision, a collision signal to itself to ensure that other ports on the repeater determined to have the collision receive the collision signal at the same time as other repeaters. As stated in the Office Action, Melvin is totally silent on how collision detection is actually performed. However, the Office Action states that Gerety teaches, in accordance with the 802.3 standard, handling collision detection in which a collision detection signal is transmitted out on the reference bus to all other devices including itself. However, Applicants submit that col. 5, line 64-Col. 6, line 9 of Gerety teaches that in the event that a collision is detected, the transmission request signal remains on the collision detection reference bus for a pre-selected time to ensure that all transmitting nodes detect the collision. There is simply no teaching or suggesting in Gerety of actively sending the collision signal to all repeaters by the repeater that detected the collision as recited in claims 1 and 24. According to Gerety, such a sustained time is preferred to

avoid collision from transmitting nodes which may not have obtained the collision status on the bus prior to the node request. As such, Applicants submit that sending the transmission request signal on the collision detection reference bus and allowing the request signal to remain on the bus for a pre-selected time to ensure that **all transmitting nodes** detect the collision as taught in Gerety is not the same as transmitting, by the repeater with a collision, a collision detection signal out on the reference bus to **all** other devices including itself as recited in claims 1 and 24. In fact, in the example taught by Gerety on page 6, line 4-9, the transmission request signal is allowed to remain on the collision detection reference bus so that two nodes at some finite length cannot jam the bus. Based on the example in Gerety, Applicants submit that if a node is not transmitting while transmission request signal is on the collision detection reference bus, the node may not receive the transmission request signal. The present invention, on the other hand, teaches that the collision signal is transmitted to **all** other repeaters. Furthermore, in Gerety, the node that placed the transmission request signal on the collision detection reference bus has no need to transmit the signal back to itself. As such, Applicants submit that Gerety simply does not teach or suggest **immediate** transmission of the collision signal, by the repeater with a collision, to all other devices including itself as recited in claims 1 and 24. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §103(a) should be withdrawn because neither Melvin nor Gerety, whether taken singly or combined, teaches or suggests each feature of claims 1 and 24 and hence, dependent claims 2-9 and 27 thereon.

Claims 10-11 and 28 were rejected under 35 U.S.C. 103(a) as being unpatentable over Melvin in view Gerety as applied to claim 1, and further in view of U.S. Patent No. 5,978,383 to Molle. The rejection is traversed as being based on references that neither teach nor suggest the novel combination of features clearly recited in independent claims 1and 24.

Molle teaches a network that is arranged with point-to-point links between hosts and repeaters. The devices can ignore a portion of an incoming signal following a collision in order to improve the efficiency of the network. Claims 10-11 depend on claim 1 and thus incorporate all of the features of claim 1. Claim 28 depends upon claim 24 and incorporates all of the features of claim 24. Molle also fails to cure the deficiencies in Melvin and Gerety as Molle does not even suggest immediate transmission, by the repeater determined to have a collision, of the collision signal to all other repeaters including itself as recited in independent claims 1 and 24. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §103(a) should be withdrawn because neither Molle, Melvin nor Gerety, whether taken singly or combined, teaches or suggests each feature of claims 1 and 24 and hence, dependent claims 10-11 and 28 thereon.

Claims 25-26 were rejected under 35 U.S.C. 103(a) as being unpatentable over Melvin in view of U.S. Patent No. 4,638,311 to Gerety as applied to claim 1, and further in view of U.S. Patent No. 5,301,303 to Abraham. The rejection is traversed as being based on references that neither teach nor suggest the novel combination of features clearly recited in independent claim 24.

Claims 25-26 depend upon claim 24 and incorporate all of the features of claim 24. Abraham et al also fails to cure the deficiencies in Melvin and Gerety as Abraham et al does not even suggest immediate transmission, by the repeater determined to have a collision, of the collision signal to all other repeaters including itself as recited in independent claims 1 and 24. Abraham et al. is primarily directed to a LAN configuration with a multiple generic LAN channel architecture which can be logically and dynamically changed. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §103(a) should be withdrawn because

neither Abraham et al, Melvin nor Gerety, whether taken singly or combined, teaches or suggests each feature of claim 24 and hence, dependent claims 25-26 thereon.

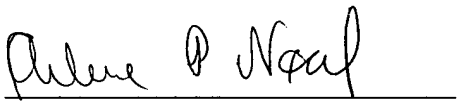
Claim 29 was rejected under 35 U.S.C. 103(a) as being unpatentable over Melvin in view of U.S. Patent No. 4,638,311 to Gerety as applied to claim 1, and further in view of U.S. Patent No. 5,7779567 to Murata et al. The rejection is traversed as being based on references that neither teach nor suggest the novel combination of features clearly recited in independent claim 24. Claim 29 depends upon claim 24 and incorporates all of the features of claim 24. Murata et al also fails to cure the deficiencies in Melvin and Gerety as Murata et al does not even suggest immediate transmission, by the repeater determined to have a collision, of the collision signal to all other repeaters including itself as recited in independent claims 1 and 24. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §103(a) should be withdrawn because neither Murata et al, Melvin nor Gerety, whether taken singly or combined, teaches or suggests each feature of claim 24 and hence, dependent claim 29 thereon.

As noted previously, claims 1-11 and 24-30 recite subject matter which is neither disclosed nor suggested in the prior art references cited in the Office Action. It is therefore respectfully requested that, in addition to claims 12-13 and 31-34, claims 1-11 and 24-30 be allowed and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the Applicants' undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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